

COMPACT FACTS

CANADA

1924

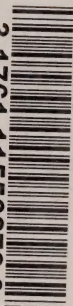
(Third Edition)

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Department of the Interior

Hon. Charles Stewart
Minister

W. W. Cory, C.M.G.
Deputy Minister

Issued by

Natural Resources Intelligence Service

F. C. C. Lynch, Superintendent

FOREWORD

THE Natural Resources Intelligence Service is a branch of the Department of the Interior of the Dominion Government. It supplies free of charge authentic information on the natural resources of Canada to all who are interested in them and in the problems relating to their development. The Service issues reports, maps and charts, a list of which will be sent on application.

Inquiries from intending settlers, business men, investors and others are welcomed and receive prompt attention. Correspondents are requested to state their needs definitely and in detail. They may thus secure the full benefit of important unpublished information.

Compact Facts

Canada, 1924

Area—Canada covers 3,729,665 square miles, of which 3.37 per cent is water. It is equal in area to the United States with Alaska, the Philippines, and all other possessions, but has a population less than that of the three cities of New York, Chicago and San Francisco.

The Six Natural Divisions—(1) Appalachian (Nova Scotia; New Brunswick; Prince Edward Island; south-east Quebec). (2) St. Lawrence lowlands (St. Lawrence valley; south Ontario). (3) Laurentian plateau (remainder of Quebec; all Ontario north of peninsula, and north-east of line from lake of the Woods through Manitoba and Saskatchewan to Great Bear lake and Arctic ocean). (4) Interior plain (prairies and basin of Mackenzie and Athabaska rivers). (5) Cordilleran belt (all the mountainous country west of 4). (6) Arctic archipelago.

The Skyline of Canada—The top-most altitudes in each province from east to west are: Nova Scotia, Mt. Ingonish (1,392 ft.); Prince Edward Island, North Wiltshire (311 ft.); New Brunswick, Mt. Carleton (2,630 ft.); Quebec, Table Top (4,000 ft.); Ontario, Tiptop Hill (2,120 ft.); Manitoba, Duck Mountain (2,600 ft.); Saskatchewan, Cypress Hills, (4,790 ft.); Alberta, Mt. Alberta (13,500 ft.); British Columbia, Mt. Fairweather (15,500 ft.); Yukon, Mt. Logan (19,539 ft.).

Distances East to West—The distance in a direct line from Scatari island, Cape Breton, to the International boundary at latitude 141° west is 3,250 miles; and the least distance by rail from Atlantic to Pacific (St. John to Vancouver) is 3,240 miles.

Population (1921)—8,788,483, an increase of 63 per cent over that of 1901 in spite of the heavy losses due to the war. Children now living should see Canadians numerically equal to the present white population of the whole British Commonwealth, of which British and French stock in Canada already forms 12 per cent.

Origins of Population—British (55.40%) and French (27.91%) make up 83.31 per cent of the whole; other Europeans 8.59%. Of the remaining 8.10% Asiatics are less than 1%; native Indians and Eskimos number 113,865.

Percentage of Rural Population in 1901, 62.50; in 1911, 54.58; in 1921, 50.47. Of the total population in 1921 one-fifth lived in the seven cities of Montreal, Toronto, Winnipeg, Vancouver, Hamilton, Ottawa and Quebec.

For every square mile of territory the United Kingdom supports 374 people; Holland, 407; Belgium, 658. Canada supports 2.3.

Birth Rate and Death Rate—Births per 1,000 living, 29.36; deaths, 13.74; infant mortality stated to vary from 52 to 214 per 1,000 births in 11 cities.

Immigration—Total for year ending December 31, 1923, 137,320. Of these, 70,110 came from the British Isles and 20,307 from the United States. Increase over same period 1922, 95%.

Empire Settlement Act of 1922 authorises the British Government, within a limit of fifteen years and an annual outlay of £3,000,000, to coöperate with the Government of any part of His Majesty's Dominions or with public or private organizations in schemes for assisting suitable persons to settle in any part of His Majesty's Dominions overseas.

Cost of Living—The average weekly cost of a family budget for five persons of 29 staple foods in July, 1923, was \$10.17, as compared with \$7.42 in July, 1914, and \$16.92 (highest point reached) in June, 1920.

Education—Universities, 23; students, 35,316; professional and affiliated colleges, 67; students, 20,486.

Religious Percentages, 1921—Roman Catholics, 38.50; Presbyterians, 16.03; Anglicans, 16.02; Methodists, 13.18; Baptists, 4.80; Lutherans, 3.28; Greek Catholics, 1.93; Jews, 1.42. The remaining 4.84 per cent is distributed among 12 denominations.

CLIMATE OF CANADA

These are the data for the longest periods on record.

Province	Station	Highest temp. (Fahr.) on record	Lowest temp. (Fahr.) on record	Mean temp. of warmest month on record	Mean temp. of coldest month on record	Normal precipi- tation (rain and snow)	Normal hours of sunshine in year.
B.C.....	Victoria.....	90.1	- 2.0	62.3	29.5	32.49	1822
B.C.....	Okanagan.....	96.0	-19.4	73.4	10.0	—	1970
Alta.....	Edmonton.....	94.2	-57.0	66.4	-13.7	18.20	2081
Alta.....	Calgary.....	95.0	-49.4	65.4	- 7.7	16.30	—
Sask.....	Prince Albert....	96.0	-70.4	67.0	-18.8	15.97	2258
Sask.....	Qu'Appelle.....	101.5	-55.0	69.5	-14.2	18.96	1831
Man.....	Winnipeg.....	103.0	-53.5	72.2	-16.2	20.24	2154
Ont.....	Toronto.....	103.2	-26.5	76.0	10.2	33.46	2046
Ont.....	Haileybury.....	102.0	-48.0	70.8	- 3.7	29.73	1733
P.Q.....	Montreal.....	96.0	-27.0	73.6	3.7	40.32	1800
P.Q.....	Quebec.....	96.0	-34.3	74.1	1.3	41.10	1819
N.B.....	St. John.....	88.9	-21.0	65.0	10.0	—	—
N.B.....	Fredericton.....	96.0	-35.0	67.9	7.1	46.44	1972
N.S.....	Halifax.....	98.7	-16.0	68.7	16.8	—	—
N.S.....	Yarmouth.....	86.0	-12.0	64.5	20.6	47.58	1864
P.E.I....	Charlottetown....	92.0	-21.0	69.9	8.0	39.27	1798
Yukon...	Dawson.....	94.6	-68.0	65.7	51.3	—	—
N.W.T...	Ft. Simpson.....	88.0	-62.0	—	—	—	—

The lowest temperature on record was at Good Hope, N.W.T.—79 deg. The highest was at Medicine Hat 108.2.

The great northern loop of the summer isotherm of 55° Fahr., extending beyond Good Hope in Lat. 67° N., combines with the longer hours of daylight to extend the limit of crop cultivation in the northwest to the edge of the Arctic circle.

Snowfall diminishes east to west. Averages in 30-70 years are: Charlottetown (P.E.I.), 83.0 in.; Yarmouth (N.S.), 79.9 in.; Fredericton (N.B.), 135.0 in.; Quebec (P.Q.), 125.6 in.; Montreal (P.Q.), 120.7 in.; Toronto (Ont.), 66.0 in.; Winnipeg (Man.), 48.7 in.; Qu'Appelle (Sask.), 55.4 in.; Medicine Hat (Alta.), 32.6 in.; Vancouver 25.1 in.; Victoria (B.C.), 14.3 in.

Compare the two stations farthest north, Dawson (Y.T.), 59.9 in.; Fort Chipewyan (N. Alta.), 49.2 in.

(Ten inches of snow = 1 in. of rain.)

FINANCE

National Debt—Canada's net national debt increased from \$335,996,850 in 1914 to \$2,453,776,868 on March 31, 1923, or from \$43 per head to \$279.

Exchange—A United States dollar in 1921 was worth 17 cents more than a Canadian dollar.

An English pound in 1921 was worth \$1.26 less than its par value in Canada (\$4.86).

Present exchange (Jan., 1924)—\$1.00 Canadian = .97 to .98 United States. £1 sterling = \$4.38.

United States Investments in Canada—The United States branch factories are estimated at 1,000. They escape Canadian tariff and enjoy the Imperial and other preferential agreements. The amounts of British and American capital invested in bonds and industries in Canada are estimated to be now about \$2,500,000,000 each.

TRADE

Balance sheet of 1918—

DR.

To United States...	\$791,906,125
United Kingdom	81,324,283
Empire.....	46,731,088
Foreigners other than United States.....	42,582,250
	<hr/>
	\$962,543,746
Credit balance.....	623,626,046
	<hr/>
	\$1,586,169,792

CR.

By United King- dom.....	\$861,073,399
Empire.....	43,846,632
United States...	441,390,920
France.....	206,585,063
Other foreign nations.....	33,273,778
	<hr/>
	\$1,586,169,792

A debit balance of trade of \$4,000,000 in 1901 changed to a credit balance of \$600,000,000 in 1918. The figures of 1918 express the peak of production in war time, but show what Canada can do.

BALANCE SHEET FOR YEAR ENDING MARCH 31, 1923

DR.

To United States...	\$541,387,837
United Kingdom	141,287,671
British Empire.	38,269,914
France.....	12,408,536
Other.....	69,111,085
	<hr/>
	\$802,465,043
Credit balance.....	128,986,400
	<hr/>
	\$931,451,443

CR.

By United States...	\$370,892,434
United Kingdom	379,067,445
British Empire.	60,558,447
France.....	14,339,737
Other.....	106,593,380
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	\$931,451,443

Imports and Exports—The population of 5,371,315 in 1901 exported produce to the value of \$36 per head. The population of 1922 exported to the value of \$84.25 per head. The corresponding imports were \$33 and \$85.

Imports of British Goods—In 1921 Canada imported to the value of £2 3s. 6d. per head of her white population. Australia imported £8 7s. 1d., New Zealand £12 0s. 2d., France imported £1 2s. 7d., and the United States 9s. 3d. per head.

In exchange Canada exported £2 2s. 6d. per head, Australia £8 6s. 10d., New Zealand £11 13s. 4d., France 15s. 10d., United States 8s. 2d.

Analysis of Exports—Year ending March 31, 1922.

(a) Raw materials.....	\$329,370,942
(b) Partly manufactured.....	107,227,564
(c) Fully or partly manufactured.....	303,642,174

Total exports.....	\$740,240,680
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	Origin of Exports	Origin of Imports
Vegetable.....	\$317,814,106	\$173,274,288
Wool fibre, cotton, etc.....	4,585,987	139,997,137
Mineral.....	78,814,949	277,567,775
Forest.....	179,925,887	35,791,487
Animal (including fish).....	135,798,720	46,645,789
Chemical.....	9,271,027	24,041,885
Other.....	14,030,004	50,485,971
	<hr/>	<hr/>
	\$740,240,680	\$747,804,332

Of the exports 44.4 per cent went to the United Kingdom and 39.7% to the United States.

Of the imports 15.6% came from the United Kingdom, and 69.3% from the United States.

Wealth of Canada—The estimate of the Dominion statistician in 1921, exclusive of unimproved land or natural resources, was \$17,215,305,639, or \$1,958 per head of the population.

WATER-POWER

Minimum water-power possibilities of the Dominion, by
Provinces

Province	Available 24-hour horse power at 80% efficiency		Turbine installation h.p. Dec. 1923
	At ordinary min. flow h.p.	At estimated flow for max. dev. (Dependable for 6 mos.) h.p.	
British Columbia.....	1,931,142	5,103,460	355,517
Alberta.....	475,281	1,137,505	33,067
Saskatchewan.....	513,481	1,087,756
Manitoba.....	3,270,491	5,769,444	162,025
Ontario.....	4,950,300	6,808,190	1,445,480
Quebec.....	6,915,244	11,640,052	1,116,398
New Brunswick.....	50,406	120,807	44,539
Nova Scotia.....	20,751	128,264	54,950
Prince Edward Island.....	3,000	5,270	2,239
Yukon and Northwest Territories.....	125,220	275,250	13,199
	18,255,316	32,075,998	3,227,414

NOTE.—The figures in columns 1 and 2 are based on rapids, falls and power sites of which the actual drop or the head of concentration is definitely known. No account is here taken of other innumerable rapids and falls, especially in northern areas, nor of feasible sites for concentration of power by dams and reservoirs, if they are not yet matters of record resulting from detailed surveys or studies.

Turbine Installation—An analysis of the actual water wheel installation of 3,227,414 h.p. gives an average machine installation about 30% greater than is indicated by the six months flow maximum power as estimated above. On this basis the water-power resources of the Dominion at present recorded will permit an actual turbine installation of more than 40,000,000 h.p.

Power Stations—Of the primary power generated in central electrical stations 91% is derived from water.

Hydro-Electric Power Commission of Ontario in 1910 supplied 750 horse-power energy to 10 municipalities. In 1922 it distributed 450,000 horse-power, viz., 305,000 horse-power to 265,000 customers in 234 municipalities and 44 townships, besides exporting 60,000 horse-power to the United States. There are 3,000 miles of high voltage transmission lines from 11 separate systems. The total investment exceeds \$200,000,000.

FUEL

Coal—Canada has the only two coal regions on the sea coasts of North America. One, Nova Scotia, has actual reserves of 2,000 million, the other, British Columbia, 23,000 million metric tons of high grade bituminous. Canada's "probable reserve" trebles the amount of her "actual reserve" (415 thousand million tons) and represents 16% of the estimated coal reserves of the world.

Alberta has 93% of Canada's "actual reserve," including 4,000 million tons of semi-anthracite and bituminous.

Other coal fields are found in New Brunswick and in the Northwest. A coal seam on the Mackenzie river is still burning as when seen by Alexander Mackenzie in 1789.

Coal Trade—June 30, 1922, to July 1, 1923. Production, 17,575,189 short tons. Exports, 2,228,119. Imports, 19,344,433, viz., from United States, 18,291,279 (anthracite 5,091,569), from Great Britain 1,053,154 (Welsh anthracite 293,024). Production (1923) 17,132,536.

Lignite—Alberta and Saskatchewan have vast reserves of lignite. A government experiment plant for briquetting this "brown coal" has for some years been operated at Bienfait, Sask.

Oil and Gas—Special regulations govern the issue of oil and gas permits and leases in the Northwest Territories. Companies must be incorporated under the Companies Act (ch. 79 Revised Statutes of Canada, 1906), and an Order-in-Council of February 1921 lays down that citizens of another country, the laws, customs or regulations of which deny similar or like privileges to citizens or corporations of the British Empire, shall not by stock ownership, stockholding or stock control own any interest in any permit or lease acquired under the provisions of these regulations.

Petroleum—The total production of crude petroleum in Canada for 1922 was 178,567 barrels, of which 164,731 were from southwestern Ontario, 7,778 from New Brunswick and 6,058 from Alberta. Petroleum is found in the basin of the Mackenzie river; this large area is being fully prospected.

Oil Shales are found in quantity in New Brunswick, (Albert and Westmorland counties) and in Nova Scotia (Pictou and Antigonish). In each of these provinces estimates of mining engineers run as high as a thousand million tons of a quality to yield from 20-110 gallons of crude oil and 30-90 pounds of ammonium sulphate per ton, but little or no systematic effort has yet been made to determine the number, thickness or extent of the various beds. Experiments in retorting these shales have been carried out in New Brunswick.

Other large deposits of shales are in the Pasquia Hills on the Manitoba-Saskatchewan border.

Peat—Of an estimated overlain area of 37,000 square miles the known peat bogs of Quebec, Ontario, Nova Scotia, New Brunswick and Manitoba comprise 12,000, with

average depth 6 feet. One square mile of such bog should produce 774,000 tons of peat fuel with moisture content 25%. The 110 bogs investigated should produce 200 million tons of fuel. The economic shipping distance for peat fuel under Canadian conditions is about 100 miles. The bog at Alfred, Ontario, operated experimentally by the Federal and Ontario Governments, produced 3,000 tons in 1922.

Bituminous Sands 150-200 feet thick lie along the Athabaska river for 73 miles. Drawn out by the sun, the tar runs into deep pools. Similar sands are found at intervals from Lat. 57° to beyond the Arctic circle. The soaked area is possibly 10,000 sq. m. This deposit represents the largest known occurrence of solid asphaltic material

Natural Gas—South Ontario has been a producer for 30 years. There are many fields in Alberta and some in New Brunswick. Production in 1923 15,000,050,000 cubic feet.

Carbon Black is a by-product of natural gas increasingly used in the rubber industry and for printing inks. Plants for its manufacture are contemplated in gas fields of Alberta and in Ontario.

'Carbon Black Regulations' issued in August, 1923, covering the use of natural gas for this purpose on Crown properties may be had on application to the Department of the Interior, Ottawa. Imports (1923) about 1,750,000 pounds.

TRANSPORTATION

The lengths of seven rivers in Canada are:

Mackenzie (with Peace, 1,085).....	2,525 miles
St. Lawrence (without Ottawa, 685).....	1,900 "
Nelson (with South Saskatchewan, 1,205, but without North Saskatchewan, 760)	1,600 "
Churchill.....	1,000 "
Fraser.....	695 "
Yukon (in Canada).....	655 "
Columbia (in Canada).....	465 "

Canals with a minimum depth of 14 feet and a minimum width of 45 feet allow cargo to pass from Montreal, the limit of ocean navigation on the St. Lawrence, to Port Arthur, a distance of 1,229 miles. The new Welland canal ($26\frac{3}{4}$ miles) will have a minimum depth of 25 feet in reaches; the 7 locks will each be 800 feet long, 80 feet wide, and 30 feet deep.

The registered tonnage (52,000,000) that passed through the Sault Ste. Marie canals (Canadian and American) in the 252 days of the open season in 1922 was 37 per cent more than the combined tonnage that passed through the Suez canal (18,000,000) and the Panama (20,000,000) in the full year.

Railways—The Canadian National Railways operated (1922) 22,680 miles, including Intercolonial (2,283), National Transcontinental (1,997), Canadian Northern (9,994), Grand Trunk Pacific (2,710), Grand Trunk (5,308), Hudson Bay (214). This Government system extends in the east to Halifax, N.S., Portland (Maine), Boston (Mass.), and in the west to Vancouver, B.C., Prince Rupert, B.C., and Chicago (Illinois).

The Canadian Pacific Railway has a mileage in Canada of 14,821.

The Temiskaming and Northern Ontario Railway is extending its main line to James bay.

The total steam single-track mileage in Canada in 1922 was 39,773, or 1 mile for every 207 of the population (United States 1 to 390). Electric railway mileage (1922), 2,493.

History of Canadian Shipbuilding—

1605. Boats built at Port Royal (Annapolis, Nova Scotia), by Francois Gravé.

1761. "Pompey," 25 tons, launched at Yarmouth, N.S.

1788. "N. West America," schooner launched at Nootka, B.C.

1833. "Royal William," built in Quebec, the first ship to cross the Atlantic under no power but steam.

1875. 188,000 tons launched (wooden ships).

1896. 10,000 tons launched.

1915-16. Imperial Munitions Board contracted for 337,160 tons from Canadian shipyards.

1922, vessels built, 78,109 tons; number of vessels on register, 7,641 (steamers 4,328), tonnage 141,524.

Canadian Government Merchant Marine (Ltd.)—The Government fleet consisted (1923) of 64 steel ships ranging from 2,800 to 10,500 dead weight tonnage. These vessels are found on the principal trade routes of the world.

Aeronautics—The Canadian Air Force, a branch of the Dept. of National Defence, studies the development of aeronautics, prescribes aerial routes, constructs government aerodromes, licenses pilots, and regulates and controls aerial navigation over Canada.

Aeroplanes and seaplanes are in use by the federal and provincial governments for the protection of forests from fire, the mapping of pulpwood areas and for general exploration. There are about 12 companies using flying machines for commercial purposes.

An airboat can fly from Halifax to Vancouver and descend on a lake or a river, within easy reach of supplies, at intervals not exceeding 150 miles.

Radio Telegraphy—The Department of Marine and Fisheries administers the Radio Telegraph Act and controls the present 13,280 radio stations (11,485 private receiving). The Government owns a land station at Ottawa, and 66 ship or coast stations. That at Barrington Passage, N.S. (range 1,500 miles), is used for service with Bermuda. Transatlantic service is from Glace Bay, N.S. (Marconi Co., 3,000 miles) and from Newcastle, N.B. (2,500). Seven direction-finding stations are in use, six on the Atlantic, one on the Pacific coast. The latest development is the radio-lighthouse.

Telephones are used in a proportion of one telephone to every eleven persons in the Dominion.

Motor Cars—One in 20 of the whole population (i.e. at least one family in every 5) owns a licensed passenger car.

AGRICULTURE

Farm Lands—Of the 300 million acres fit for farming in Canada, one-half is in farm holdings; only one-quarter is cultivated; 225 million acres await the plough or tractor and the man.

Owners and Tenants—The farms number 711,090 on 141,045,509 acres. Of these farms 86.5 per cent are occupied by the owner or manager, 7.86 are worked on shares, and only 5.64 are tenanted.

Prairie Provinces—Of the 178 million acres fit to farm in the 454,789,678 acres forming the land area of the Prairie Provinces less than 33,000,000 acres apart from grazing lands were under cultivation in 1921.

IRRIGATION IN ALBERTA AND SASKATCHEWAN

	Irrigable area	Irrigated area	Users	Canals
	acres	acres		miles
System constructed and in operation (1921).....	766,224	207,819	2,824	4,241
System under construction, part in operation.....	202,640	9,400	64	355
System under construction, not yet operated.....	128,000
	1,096,864	217,219	2,888	4,596

These acres are part of an irrigable area of 3,923,601, the rest of which has been either surveyed and proved feasible for development or is believed to be so.

Even at the high estimate of 100 acres for an irrigated farm land is now available for a further 9,000 settlers. The higher cost of irrigated land is an insurance premium against failure.

Irrigation in British Columbia—The ten or more smaller irrigation systems in central southern British Columbia have made fruit growing, intensive farming and small holdings safe and profitable. Grazing tracts to which water can be brought by canals are being subdivided.

Drainage Projects—Fourteen projects, covering an area of 220,000 acres, for the reclamation of swamp lands for agriculture have been investigated by the government and recommended as feasible. A survey has also begun of a tract of 1,100 square miles in northern Saskatchewan and northern Manitoba.

Wheat—The interior plain of Canada and the plains of Russia are the world's reserve granaries for hard spring wheat. The record production of Canadian wheat is 470,328,000 bushels (est. for 1923). 1922, 399,786,400 bushels (value \$339,419,000). Bushels per acre (1923) 20·75.

The famous Canadian varieties are "Marquis," and "Prelude." Marquis has been propagated from a single plant isolated by Dr. Saunders at the Ottawa experimental farm in 1903. The beardless variety, "Ruby," is much used in the North and "Dawson's Golden Chaff" is the best winter wheat.

Wheat Exports—Five-year average (1911-15), 80 million bushels; 1921, 310 million; 1923, 215,874,566 (exclusive of flour).

Importing countries require annually 600-700 million bushels.

Acreage sown to wheat in 1916, 15,369,700; in 1923, 22,730,149.

Milling—A mill at Annapolis, N.S., occupies the same site as the first flour mill in Canada, erected in 1605. A Canadian flour mill with a daily capacity of 14,000 barrels is now the largest in the British Empire. The daily capacity of the 1,333 flour and grist mills operated in 1922 was 128,225 barrels of flour.

Exports, 1922-3, 11,069,054 barrels.

Elevators—The number of grain elevators for the license year 1922-3 was 4,020, with a total capacity of 238,107,420 bushels. Of this capacity 41 per cent is served by Canadian Government Railways and 54 per cent by Canadian Pacific.

Oats—Besides the "Banner", "Victory" and other standard varieties the hull-less "Liberty, Ottawa, 480" introduced in 1918 is recommended by the Dominion cerealist. The record yield is 530,709,700 bushels in 1920.

Barley—A "Mensury" variety (O. A. C. No. 21) is that generally grown. At the Ottawa experimental farm hundreds of strains are under test. The record yield is 77,287,240 bushels (1918).

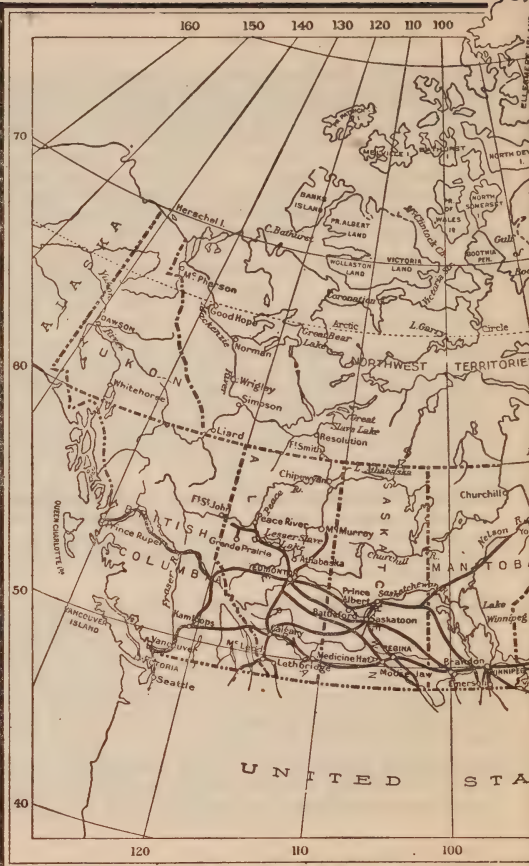
Fruit—The famous fruit districts of Canada are the Annapolis valley in Nova Scotia, the Niagara peninsula in Ontario, and the Okanagan and other valleys and S.E. Vancouver island in British Columbia.

The market is world wide. The social conditions, the beauty of the homes, and the abundance of good land invite enquiry.

Orchards, Vineyards, and Other Small Holdings for Special Purposes—For pamphlet on four districts suited to retired officers with pensions or family men with moderate means write to Natural Resources Intelligence Service, Ottawa.

Dried Fruits and Vegetables—Potatoes, onions and apples were dehydrated on a very large scale to feed armies in war time. By processes neither costly nor difficult the principle can be successfully extended to domestic use and should be the means of saving all kinds of fruits and vegetables that are now lost, to the benefit of orchardists and home gardeners. Nowhere in Canada can fruit be fully sun-dried.

Dehydration plants—The Federal Department of Agriculture is operating a commercial plant at Grimsby, Ont., a semi-commercial plant at Penticton, B.C., and a labora-



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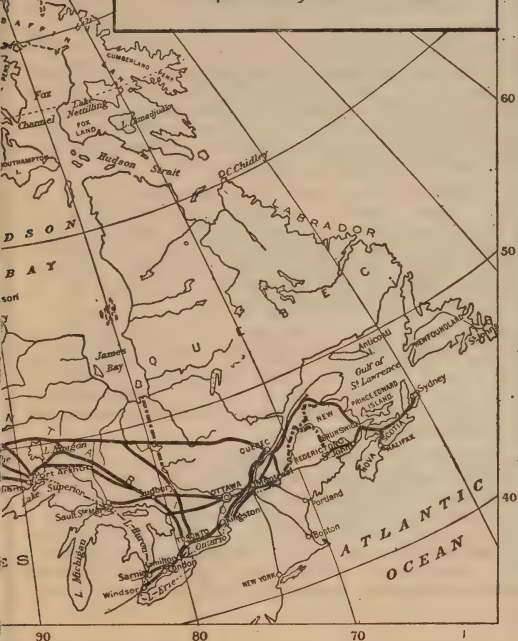
MAP OF THE DOMINION OF CANADA

SCALE OF MILES

100 0 100 200 300 400 500



Principal Railways.....



60

50

40

90

80

70

1

tory plant at the Central Experimental Farm, Ottawa. For plans of dehydration equipments write to Inspector of Canned Foods Division, Department of Agriculture, Ottawa.

Berries and Crystallized Fruits—Strawberries, raspberries and loganberries on a commercial scale are specialties of southeast Vancouver island, and the Fraser river delta, British Columbia. Jam factories contract for the sound fruit not shipped in crates. The crystallized fruit industry is worth attention.

The currant, gooseberry and raspberry grow wild almost or quite to the Arctic circle; hence settlers in the far north can be well supplied with either the native fruit or with the hardiest of the cultivated sorts. Lists of suitable varieties for every province can be obtained from the Department of Agriculture, Ottawa.

Nuts—Interest in the much neglected nut industry is likely to grow. Besides the native nut trees (black walnut, white walnut or butternut, shagbark hickory, sweet chestnut and hazel) foreign varieties, such as English or Persian walnut, Chinese walnut, European chestnut, hardshell almonds, and filberts are recommended for beauty and use in suitable districts.

Flaxseed—The acreage in Canada (1923) was 563,400, of which 461,000 was in Saskatchewan. The variety grown in the Prairie Provinces is used for linseed. In 1920 the acreage was 1,428,164. How to utilize the waste straw is now a subject of research. It is thought suitable for paper and strawboard.

Fibre Flax—The Ontario peninsula grows high-grade spinning flax and exports seed guaranteed by the Dominion Government. Flax has been grown in Quebec since 1617 and the Maritime Provinces and western British Columbia have areas equally suitable. A Canadian invention for "pulling" is now in use. In 1920 Ontario planted 21,053 acres, Quebec 16,025, but, Irish and other yarns being again available and there being no longer a bounty,

the acreage in Canada in 1922 fell to 1,200. A model flax factory is operated at the Experimental Farm, Ottawa.

Hemp—A bounty on hemp for five years from May, 1923, is greatly extending the hemp acreage, mainly in Manitoba. Binder twine and bags can be made from the fibre and paper pulp from the straw. The imports of binder twine in 1923 were valued at \$7,037,122 and of hemp and jute yarn at \$1,931,622.

Beets for Sugar are grown for three factories in southwest Ontario. In 1920, the acreage was 36,288, and the crop 412,400 tons. The 1922 acreage was 20,795.

Tobacco is grown in Ontario in the counties along the shore of lake Erie; in Quebec, in the counties near Montreal, along the St. Lawrence; and in the Okanagan valley, British Columbia. The 1920 crop from 53,114 acres was 48,088,500 pounds, valued at \$13,106,550. In 1922, 25,762 acres, 25,947,570 lbs. Average price in Ontario, 25 cents per lb., in Quebec, 12 cents.

Horses—Canadian horses carry off the highest prizes at United States shows. The demand is strong for definite types of horses needed for draught, delivery, police and military work, and also for hunters and saddle horses. Horse power is pronounced cheapest for general farm work and for most of the cartage in cities. The club system of breeding under the Federal Assistance policy secures the services of good sires. Horses in Canada, 1920, 3,400,352; 1922, 3,648,871.

Sheep and Wool—Sheep-raising in Canada could be greatly developed. In 1920, flocks totalled 3,720,783; in 1922, 3,263,525. Co-operative wool growers' associations for grading and marketing wool are rapidly spreading. The price for washed wool in 1922 averaged 22 cents a pound (1918, 80 cents). Excellent homespun cloth is produced by the habitants in the province of Quebec.

Cattle—Canadian cattle numbered 10,206,205 in 1921 and 9,719,869 in 1922.

Swine—in 1921, 3,904,895; in 1922, 3,915,684.

Dairying—The value of the dairy products for 1921 was placed at \$212,896,350, of which \$52,863,867 was exported. The exports for 1922 were \$36,542,237. Ice-cream is a universal article of food, averaging five pints a head in the year.

It is estimated that one hundred million pounds of milk will be marketed in 1923 in the form of milk powder manufactured mostly by the modern spray instead of the hot roller process.

The Dairy Produce Act of 1923 says that "all creamery butter and factory cheese shall be graded before being exported". Montreal has still the greatest world cheese market. Butter and cheese have for 20 years been officially inspected as to condition at Canadian and United Kingdom ports. A refrigerator car service "picks up" small lots of butter as an aid to marketing. There were 3,114 factories in 1921.

Quebec province holds the world's record for both butter and milk yield of a single cow. Dekol Plus Segis Dixie, a Holstein at Raymondale farm, Vaudreuil, in the year ending June 26, 1923, produced 33,477·3 pounds of milk containing 1,686·5 pounds of butter.

Poultry—The thirty-four million hens in 1922 failed to meet the home consumption of eggs, and the export demand and necessitated imports worth \$1,200,000, but contributed most of the exports of dressed poultry worth \$860,000. Canadian eggs for export must now display the government mark of approval.

Bees—The Bee Division of the Ottawa Experimental Farm spreads the science of breeding, feeding, manipulation, production and marketing. Though the warm summers, abundance of white clover and wild flowers (especially fireweed and goldenrod) and large orchard districts could amply supply home needs, the imports of honey and "imitations" in 1922 were valued at \$92,534, compared with exports \$12,840.

Fertilizers (chemical) 1921. Production, 141,862 tons; imports, 100,321 tons; exports, 107,914 tons. Assuming that about one-half of the raw material produced (70,000 tons) is used in the compounded goods, the consumption may be estimated at 100,000 tons yearly, or one ton to each ten acres of fruit and vegetable farms.

FORESTRY

Forests—Next to Russia and the United States, Canada has the largest forest resources in the world. Care is taken to preserve the timber supply by aeroplane scouting, wireless telegraphy, portable telephones and power pumps, replanting, prevention of pests, forest product laboratories, stricter legislation, and dominion and provincial reserves.

FOREST PRODUCTS

Merchantable Timber—Of the 950,000 square miles of forest lands about 456,800 carry timber from 6 inches in diameter, including about 275,000 square miles of saw timber (from 10 inches). The remainder is at present inaccessible or unprofitable. The estimate for yearly depletion through use, fires and pests is 5,500 million cubic feet, to replace which an average increment of 11.5 cubic feet per acre is requisite. Of the total forest area the State owns 93.42 per cent, of which 25.82 is dedicated to timber production.

Pulp and Paper Industry—Total production from 104 mills operating (1922), \$155,785,388.

Pulpwood—Of the 3,923,240 cords cut in 1922, twenty-five per cent were exported to United States in raw state.

Manufactured Pulp exports in year ending Sept. 1923 were 88,853 tons valued at \$46,973,825.

Newsprint, ditto, 11,008 tons valued at \$81,950,919.

PULP AND PAPER MILLS IN RELATION TO WATER POWER

	Mills	Power required	Pulpwood available (millions of cords)
Nova Scotia.....	10	17,999	30
New Brunswick.....	3	14,668	33
Quebec.....	54	312,867	300
Ontario.....	41	242,746	200
British Columbia.....	5	48,800	285
	113	637,080	848

This industry demands (1922) about 4,000,000 cords of pulpwood. As the base of supply moves further north, great water-powers as yet undeveloped will come into use.

Forest Waste By-Products—Fibre board and paper yarn; cellulose convertible into ethyl and methyl alcohol, pyroligneous acid, acetate of lime, artificial silk, etc.; tannins, oils, gums and resin; sulphite pitch as a binder for briquettes.

Wood Distillation—Maple and beech are the principal hardwoods used in 17 distillation plants. Products are charcoal, methyl alcohol, calcium acetate, acetones, formaldehyde, hemlock bark extract and creosote oils.

Maple Sugar—Canada produces yearly about 20,000,000 pounds, of which 70 per cent comes from Quebec, 25 per cent from Ontario, and the remainder from the maritime provinces. By-products are fine vinegar, malic acid and the baking powder constituent, bimalate of lime.

MINERALS

Only the southerly and western fringe of the Dominion has been prospected and that only in parts. In northern extensions of known mineral belts similar deposits must occur.

Cobalt—The Cobalt and adjoining areas of the Timiskaming district, Ontario, have been for several years the chief source of the world's supply of cobalt, but the concentrates from N. Queensland may now be able to compete with the Canadian by-product. Metallic cobalt, cobalt oxide and cobalt salts are recovered from the treatment of the ores and residues derived from the silver-cobalt-nickel arsenides.

Production in 1923, 858,660 pounds valued at \$2,507,000.

Copper—The record production was 118,769,434 pounds in 1918. Copper is mainly derived from the nickel-copper ores of the Sudbury district, Ontario, and the copper-gold-silver ores of British Columbia. Recent years have witnessed the development of important deposits at Britannia and other points on the Pacific coast; at Copper mountain near Princeton, British Columbia, and in the Pas district, northern Manitoba. This last has in one area alone 16,000,000 tons of undeveloped 1.88 per cent copper ore. Production in 1923, 86,312,000 pounds valued at \$12,515,000.

Gold—Growth of output in 30 years.

	1892	1922	Record
	oz.	oz.	oz.
All Canada.....	43,905	1,230,985	1,350,057
British Columbia...	19,327 (1894)	175,558	238,383
Yukon.....	4,233	54,370	1,077,553
Ontario.....	1,785	994,848	994,848

Production 1923, 1,179,500 oz.

The chief producing area is now the Timiskaming district in N. Ontario.

Iron—Important deposits of ore are found in Ontario, Quebec, British Columbia, Nova Scotia and New Brunswick, but economic conditions are as yet unfavourable to development. The ore mined in 1922 was 1,255 tons in British Columbia and 297 at Baie St. Paul, Quebec. Imports from Newfoundland were 140,594 tons and from the United States 509,185.

In 1923 magnetite was shipped from Texada island, B.C., and beneficiated hematite from Moose mountain, N. Ontario.

Lead—Lead is produced mostly from the mines of East and West Kootenay and other areas in British Columbia; from the rich deposits of Mayo district, Yukon territory; at Notre Dame des Anges, Que., and at Galetta, Ont.

Production in 1923, 112,600,000 pounds, valued at \$7,882-000.

Nickel—The Sudbury district of Ontario produces 80 per cent of the world's nickel requirements. Most of the output is now being refined in Canada, at Port Colborne, Ont., and Deschenes, Que.

The product is nearly all exported. Ore reserves have been developed far enough to ensure an established industry for the next half century.

Production in 1922, 8,748 tons; in 1923, ³⁰⁷²²~~61,444,000~~ tons, valued at \$18,433,000.

Silver—Canada reached the high mark of 32,869,264 ounces of silver in 1910, a few years after the discovery of the rich ores of Cobalt and adjoining areas. The production in 1923, was 18,864,000 ounces, valued at \$10,944,000. In 1922 Ontario produced 60% and British Columbia 35%. The Portland canal district in British Columbia makes heavy shipments and Keno Hill in the Mayo district of Yukon is a new and promising silver camp.

Zinc—The Kootenays, B.C., are the principal source of zinc in Canada. The electrolytic processes now in use avoid the necessity of shipping at heavy cost of freight and duty to American smelters. There are workable

deposits at Notre Dame des Anges, and in the Gaspé peninsula of Quebec. Production, 1923, 60,000 tons, valued at \$3,960,000.

Asbestos—Canada still produces from the great chrysotile asbestos field in eastern Quebec slightly over 75 per cent of the world's supply, but, besides a revival of the industry in Russia, there is a growing output in Southern Rhodesia, South Africa and the United States. Production in 1923, 205,000 tons, value \$7,400,000.

Radium—Radio-active minerals have not been found in economic amounts but pitchblende, uraconite, samarskite and gummite occur at several places in Quebec and Ontario.

Helium Gas—Canada has the only commercial source of helium in the Empire. Gas wells in the Bow island field, Alberta, and the Blackheath-Seneca field, Ontario, contain .32 to .34 per cent helium. In the Kansas fields in the United States are wells that run 1.28 per cent. The cost of production is estimated at from \$20 to \$50 per thousand cubic feet. Development of aviation requires for dirigibles this non-inflammable gas.

Phosphate—The large deposits of apatite in western Quebec and eastern Ontario, which was an article of export before the discovery of sedimentary phosphate rock in the southern United States, are now dormant.

Salt—Most of the 185,000 tons produced in 1923 came from the salt fields of southern Ontario, but Nova Scotia is also a producer. The mine opened up at Malagash, Nova Scotia, 1916, is the first discovery of rock salt in Canada at a depth shallow enough for economic mining. The output here in 1922 was 5,053 tons. Rock salt is also found in thick beds at 700 ft. near McMurray, Alta.; deposits from the saline springs in Salt R., North Alberta have long been utilized.

Other Minerals—Canada also yields her share of arsenic, chromite, feldspar, fluorspar, graphite, gypsum, mica, magnesite, pyrites and talc.

The total mineral production of Canada in 1923 was valued at \$214,102,000.

FISHERIES

Sea Fisheries—Of the three great salt water fishing areas in the world—North Atlantic, North Pacific and North Sea—Canada controls one-half of the two first. Market value of sea fish (1922) \$37,245,949. Sea-fish include salmon, cod, lobster, halibut, herring, mackerel, haddock, etc.

Fresh Water Fisheries—Besides a half share (36,352 sq. m.) in the Great Lakes, the 120,924 sq. m. in 219 of the all-Canadian lakes would cover the mainland surface of the British Isles. Market value of inland fish (1922) \$4,662,127. Inland fish include whitefish, lake trout, cisco or lake herring, pike, etc.

Fishery By-Products worth attention are oils, fertilizer, glue, fish-meal for poultry and live stock feed, roe, caviare, glycerine, isinglass, buttons, leather, protein from pickling barrels, whalemeat, herring scales for artificial pearls.

The record value for all fish products is \$60,250,544 in 1920.

CHEMICAL INDUSTRIES

Chemical Products—Value of imports (1922) \$24,041,885; of exports \$9,271,027. Hydro-electric development has made such places as Shawinigan Falls, Que., and Niagara, Ont., electro-chemical centres for the production of carborundum, acetylene gas, carbon electrodes, acetic acid, acetone, calcium carbide, etc.

Nitrogen Fixation—"The world's demand for combined nitrogen appears to double every ten years." The proportion contributed by fixation plants increased from 1.38 per cent in 1910 to 41% per cent in 1922. Canada possesses resources "accessible and capable of easy development at a cost which would probably permit of the manufacture of synthetic nitrogen products more cheaply than at any other world site."

Four fixation plants are now in working or under way. That at Niagara Falls has a capacity of 60,000 tons of cyanamide.

FURS

In the 426th year since Cabot first took pelts from Canada to Henry VII the 4,366,790 marketed in 1922 were valued at \$17,438,867, of which value muskrat, beaver, mink, white fox and marten in the order named made up 78 per cent. Montreal and Winnipeg are now among the great fur marts of the world. Under the Pelagic Sealing Treaty Canada shares in the profits from the fur seals again multiplying on the Pribilof and other North Pacific islands.

Fur Farming—Canada is still the great wild fur reserve but there are now 1,000 fur farms breeding silver, patch, red, white, and blue foxes, "Persian lamb" (karakul), raccoon, mink, muskrat, beaver and skunk. Of the 4,979 silver fox pelts (av. price \$143 in 1922) 3,922 were grown on fur farms. The value of breeding stock sold was \$925,140.

Buffalo—The herd of about 1,000 wood buffalo or bison still roaming south of Great Slave lake is the last wild herd of the continent. Wood Buffalo Park (10,500 sq. miles), the largest National Park in Canada, with the Salt river therein, is reserved for their use. The Government herd of plains buffalo in the park at Wainwright, Alberta, is kept at 5,000, and is a source of robes, horns and meat.

Musk-Ox—Stone age animals, surviving in Arctic Canada and Greenland only, probably number 25,000; defend themselves from wolves by "hollow square" formation; are not shy of man; supply wool, milk and beef; need neither hay nor barns; graze in open all year round on suitable feeding grounds of one million square miles.

Reindeer—The Canadian government herd of 135 is now maintained on Anticosti island.

PARKS, FOREST RESERVES, AND SPORT

The Canadian National Parks comprise an area of about 6,000,000 acres. They are sanctuaries for wild fowl—deer, mountain sheep and goat, moose, elk, bear and buffalo, and a tourist wonderland of forest, well stocked streams and lakes, glaciers, hot-springs, waterfalls and mountains.

The scenic parks are: Rocky Mountains, Jasper, and Waterton Lakes, in Alberta; Yoho, Glacier, Mount Revelstoke and Kootenay, in British Columbia; St. Lawrence Islands and Pt. Pelee, in Ontario.—Animal Reserves: Buffalo, Elk Island parks and Foremost Antelope Reserve, in Alberta.

Historic Sites—The most famous in Canada are Louisburg (Cape Breton Island), and the citadel and Plains of Abraham at Quebec. An Historic Sites and Monuments Board has been formed to preserve all historic and prehistoric sites of national interest.

Dominion Forest Reserves—Apart from the maintenance of parks as "pleasure grounds for the benefit and enjoyment of the people of Canada," the Dominion government administers 31 forest reserves in Western Canada with a view to conserve the timber and water supply. The reserve area is 35,938 sq. m.

Provincial Parks and Reserves—Besides Strathcona park, on Vancouver island (800 sq. m.) Mount Robson Park, B.C. (650 sq. m.), Algonquin Park, Ont. (2,060 sq. m.), Laurentides National Park, Que. (3,721 sq. m.), and others, the forest reserves of Ontario and Quebec alone amount to more than 150,000 sq. m. In British Columbia, where the provincial timber domain is no longer alienable, watershed reserves cover 1,816 sq. m.

Tourists—Favoured summer resorts are the Bras d'Or lakes (N.S.), the south coast of Nova Scotia and the bay of Fundy, Prince Edward Island and the Gaspé peninsula, the Saguenay river and the St. Lawrence. Niagara,

Georgian bay and Muskoka lakes, the Great lakes, the Rocky and Selkirk mountains, South Vancouver island and the Pacific fiords.

Sport—Dominion and provinces unite in keeping their vast game preserves well stocked. The moose, caribou, wapiti, antelope, red and blacktailed deer, mountain sheep and goat, bear, salmon, trout, bass, pike, whitefish, geese, duck, quail, woodcock, snipe, and grouse make Canada the best non-tropical land for general sport.

DEFENCE

Royal Canadian Navy—Force, 430 officers and men of R.C.N., 500 of R.C. Naval Reserve, 1,000 R.C. Volunteer Naval Reserve. Ships H.M.C.S. Aurora (in reserve) 3,500 tons, 40,000 horse-power, speed 28·5 knots; H.M.C. destroyers Patriot and Patricia each 1,004 tons, 27,000 horse-power, speed 35 knots; H.M.C. submarines (in reserve) C.H. 14, and C.H. 15; H.M.C. minesweepers Festubert, Ypres, Armentieres and Thiepval. At Halifax and Esquimalt are naval training barracks, and dock-yards now closed but available when needed.

Militia—The permanent active militia consists of 16 units of all arms of the service, and (1923) has a strength of 340 officers and 3,135 men. The non-permanent active militia is made up of cavalry, artillery, machine gun, signalling, infantry and other corps. Service is voluntary and for three years. The Cadet Services including the Boys' Naval Brigade had an enrolment of 109,000 in 1923.

Royal Military College (Kingston, Ontario)—Trains 160 cadets as officers for the militia and for other professions. Commissions in the British Army are granted annually to a limited number of R.M.C. graduates.

Royal Canadian Air Force—The chief training base is at Camp Borden, Ontario, and other government stations are at Halifax (N.S.), Roberval (Que.), Ottawa (Ont.), Victoria Beach (Man.), High River (Alta.), and Vancouver, B.C. The personnel in 1923 numbered 45 officers and 195 airmen.

Royal Canadian Mounted Police number (1922) 63 officers and 1,163 of other ranks, with headquarters at Ottawa.

THE WAR AND RECONSTRUCTION

Enlistments—Total C.E.F. 590,572. Proceeded overseas, 418,052. Volunteers formed 80 per cent of total.

Casualties—Total, 215,185. Killed in action and died of wounds, 56,763. Died from other causes, 4,960.

Cost—Exclusive of pensions and re-establishment the direct cost of the war, including interest on loans was not less than \$2,000,000,000 to March 31, 1921.

War Navy—6,452 entered the Canadian Naval Service and 1,700 enrolled in the Royal Naval Volunteer Reserve. Total, with those enrolled for Imperial Navy, 8,992.

The Soldier Settlement Board aims at the purchase, in certain cases compulsory, of lands well located and of such fertility as to ensure profitable agricultural returns; at placing on such lands soldier settlers fit to farm; securing for them the best value obtainable in live stock, implements, building material and plant; and providing such guidance as may be helpful to the settler and his family.

QUALIFICATIONS OF AN ELIGIBLE SETTLER

(1) Service in a Canadian military force outside Canada, or receipt of pension in lieu of disability incurred during such service wherever he may have served.

(2) Service in His Majesty's forces, or in those of His Majesty's allies in a theatre of actual war, by a resident of Canada.

(3) Service in His Majesty's forces, or in those of any British dominion or colony, in a theatre of war outside the country where he enlisted.

(4) Widow of any person in Class (1) or (2) who died on active service, and who, but for his death, might be a settler.

Imperial Ex-Service Men, if eligible as above, are required:

(a) to pay down 20 per cent of the purchase price of land, stock and equipment.

(b) to appear before a qualification board in the district where they desire to settle.

(c) to work on a farm in Canada for one year if they have previously farmed, or for two years if they have not.

Loans are permitted:

(1) up to \$7,500 to qualified settlers buying lands through the Board.

(2) up to \$3,000 to qualified settlers on Dominion lands.

(3) up to \$5,000 for removal of encumbrances, purchase of stock, equipment or buildings to those who already own agricultural land.

Loans bear interest at 5%, and are made repayable over a period of 25 years.

All loans are granted on condition of residence and cultivation of the land until the loan is repaid.

Advisory Assistance to Non-service Men—Civilian immigrants desiring to purchase land and settle in Canada may apply to the Board for information and advice as to settlement opportunities and farming methods.

The Board has offices at St. John, Sherbrooke, Toronto, Winnipeg, Regina, Saskatoon, Prince Albert, Calgary, Edmonton, Vernon and Vancouver. The head office is in Ottawa.

Housing, Sanitation and Hospitalization fall within the range of the Department of Health.

The Housing Loan, now amounting to \$31,500,000, is shared in by the provinces on these terms: (1) provincial schemes to be approved by the Dominion government, (2) loans granted only to municipalities, housing societies and owners of lots for occupancy, (3) maximum loans \$3,500 to \$4,500, repayable in 20 to 30 years. Amount loaned to March 31, 1923, \$20,333,406; houses built, 4,612, under construction 223; municipalities operating 160.

Sanitation service gives advice on home water supply, isolated sewage disposal, ventilation, disinfection, mosquito control, etc.

Hospitalization supplies information on the planning and equipment of local hospitals, quarantine stations, etc.

(A list of free publications can be had from the Department of Health, Ottawa.)

Victorian Order of Nurses—The V. O. N., founded under Royal Charter in 1897, has 400 graduate nurses in 56 centres throughout Canada. Their special work is bedside nursing (by the hour if needed) and maternity cases, free of charge where warranted, but the order co-operate with all departmental and municipal bodies in bettering the national health by free practical instruction and personal advice.

Canadian Red Cross Society—While still busy in meeting the needs for service arising directly from the war, the Society is now organized to carry out a peace-time programme as outlined in Article XXV of the League of Nations, "for the improvement of health, the prevention of disease and the mitigation of suffering." Its activity is specially seen in Emergency Disaster Relief, nursing outposts and the enlisting of 70,000 Canadian children in the Junior Red Cross.

Employment Bureaus—The Dominion and Provincial Governments co-operate in a national system of employment bureaus. There are 70 employment offices and 4 clearing houses at the service of employers and employees. When labour is in demand, the Employment Service of Canada, the Immigration Department and the British Labour Exchanges co-operate in such a way that the Canadian, as well as the in-coming workman, is safeguarded.

League of Nations Society in Canada, established in 1921, has headquarters in Ottawa and 21 branches in the nine provinces. President, Rt. Hon. Sir Robert L. Borden, K.C.M.G.; Hon. Treasurer, Sir Arthur W. Currie, K.C.M.G., Gen. Sec. H. G. Richardson, Carleton Chambers, Ottawa.

For further information concerning these or
other facts address an enquiry to the

Superintendent,
Natural Resources Intelligence Service,
Department of the Interior,
OTTAWA.

